



SPRING-LOADED DC-LVDT

Position Sensors

MACRO GHSD 750 | GHSDR 750

Overview

The Macro Sensors GHSD 750 and GHSDR series of 3/4 inch diameter spring-loaded DC-LVDTs are designed for a wide range of position measurement and dimensional gaging applications. These rugged hermetically sealed sensors are constructed entirely of stainless steel and intended for general industrial use. The coil windings are sealed against hostile environments to IEC standard IP-68. The electrical termination for the GHSD is through a sealed axial connector. The GHSDR electrical termination is through a radially mounted sealed connector, which results in a much reduced installed length. The throughbore design allows for air purging of the sensor's bearings to remove potential contaminants. The mating connector plug is supplied with the unit.

The sensor consists of a spring loaded shaft running in a precision sleeve bearing and connected to the core of an LVDT. The use of a precision sleeve bearing results in measurement repeatability of 0.01% of full range or better. The probe shaft is fully extended by a spring exerting a nominal force of 6 to 20 ounces depending upon total range. The contact tip supplied is an AGD standard number 9 made from chrome plated hardened tool steel. It is fully interchangeable with other AGD contact tips.

Built-in electronics result in position sensors that operate from a DC input and generate a pre-calibrated DC output. The output from the GHSD 750 and GHSDR series is designed to operate with many PLCs, digital indicators, A/D converters, computer-based data processors, and QC data collection systems.

Available in ranges of ± 0.020 inch (± 0.51 mm) to ± 2.00 inches (± 50.0 mm), the maximum linearity error for a GHSD 750 Series sensor is $\pm 0.25\%$ of full range output using a statistically best-fit straight line derived by the least squares method.

For simplified mounting the LVDT has a 1/2-20 UNF 2A thread on the front of the housing, permitting the user to install the LVDT in a mating threaded part or by using the two hex nuts furnished with the sensor. This results in a ready-to-use package for position measurements and longer range gaging applications.

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Benefits

- ◆ Ranges of ± 0.020 inch to ± 2.00 inches
- ◆ ± 15 V DC input, pre-calibrated 0 to ± 10 V DC output
- ◆ Repeatability $< 0.01\%$ of FRO
- ◆ Non-linearity less than $\pm 0.25\%$ of FRO
- ◆ Coil environmentally sealed to IEC IP-68

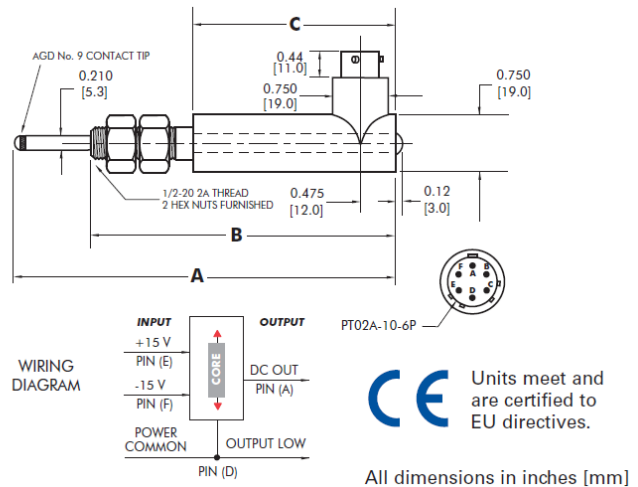
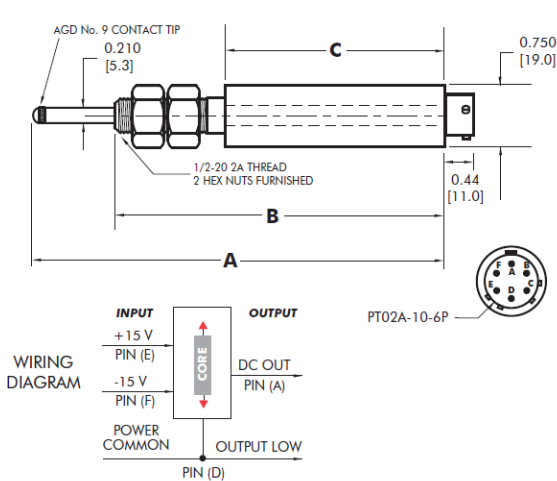
Applications

- ◆ Industrial gaging systems
- ◆ Electronic dial indicators
- ◆ Fabricated metal products gaging
- ◆ Materials testing apparatus
- ◆ Large shaft TIR measurements

General Specifications

Input Power	± 15 V DC, $\pm 5\%$ ± 25 mA (nominal)
Full Scale Output:	0 to ± 10 V DC
Linearity Error	$< \pm 0.25\%$ of FRO
Repeatability Error	$< 0.01\%$ FRO
Operating Temperature	0°F to $+160^{\circ}\text{F}$ $(-20^{\circ}\text{C}$ to $+70^{\circ}\text{C})$
Thermal Coefficient of Scale Factor:	$-0.015\%/^{\circ}\text{F}$ (nominal) $(-0.027\%/^{\circ}\text{C}$ nominal)

Dimensions



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Specifications

Model ▶ Parameter ▼	GHSD 750 -020	GHSD 750 -050	GHSD 750 -125	GHSD 750 -250	GHSD 750 -500	GHSD 750 -1000	GHSD 750 -2000
Model ▶ Parameter ▼	GHSDR 750 -020	GHSDR 750 -050	GHSDR 750 -125	GHSDR 750 -250	GHSDR 750 -500	GHSDR 750 -1000	GHSDR 750 -2000
Nominal Range (inches)	±0.020	±0.050	±0.125	±0.25	±0.50	±1.00	±2.00
Nominal Range (mm)	±0.51	±1.25	±3.0	±6.3	±12.5	±25.0	±50.0
Scale Factor (V/inch)	500	200	80	40	20	10	5
Scale Factor (V/mm)	19.7	8.0	3.3	1.6	0.8	0.4	0.2
Pretravel (inches)	0.12	0.12	0.13	0.10	0.10	0.05	0.02
Pretravel (mm)	3.0	3.0	3.3	2.5	2.5	1.3	0.5
Overtravel (inches)	0.10	0.12	0.13	0.10	0.10	0.05	0.02
Overtravel (mm)	2.5	3.0	3.3	2.5	2.5	1.3	0.5
Dimension "A" (inches)	5.46	5.46	6.10	6.86	11.36	13.82	21.75
Dimension "A" (mm)	139	139	155	174	289	351	553
Dimension "B" (inches)	4.36	4.36	4.99	5.75	9.87	11.40	17.19
Dimension "B" (mm)	111	111	127	146	251	291	437
Dimension "C" (inches)	2.82	2.82	3.44	4.20	6.70	8.20	11.71
Dimension "C" (mm)	72	72	87	107	170	208	297
Weight (ounces)	3.1	3.1	3.6	4.3	6.4	6.7	10.5
Weight (g)	85	85	102	170	180	185	296

Ordering Information

Order by model number with range. For accessories, please contact the factory.

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